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EXAMINER

MILLER, MICHAEL G

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ANDREW JAMES GOODWIN, STUART ROBERT LEADLEY,
LIAM O’NEILL, PAUL JOHN DUFFIELD,
MALCOLM TOM MCKECHNIE, and SIMON PUGH

Appeal 2015-002709
Application 11/569,100
Technology Center 1700

Before N. WHITNEY WILSON, CHRISTOPHER C. KENNEDY, and
MONTÉ T. SQUIRE, *Administrative Patent Judges*.

WILSON, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants¹ appeal under 35 U.S.C. § 134(a) from the Examiner’s
November 4, 2013 decision finally rejecting claims 1–17 and 34–38 (“Final
Act.”). We have jurisdiction over the appeal under 35 U.S.C. § 6(b).

We affirm.

¹ Appellants identify the real parties in interest as Dow Corning Ireland
Limited and Reckitt Benckiser Corporate Services, Ltd.

CLAIMED SUBJECT MATTER

The claimed invention is generally directed to a method for forming an active material-containing coating on a substrate using plasma polymerization or plasma-enhanced chemical vapor deposition (PE-CVD) (Abstract, Spec. ¶ 1). Details of the claimed invention are set forth in independent claim 1, which is reproduced below from the Claims Appendix of the Appeal Brief (*emphasis added*):

1. A method for forming an active material containing coating on a substrate, which method comprises the steps of:
 - i) introducing one or more gaseous or atomised liquid and/or solid coating-forming materials which undergo chemical bond forming reactions within a plasma environment and one or more active materials which substantially do not undergo chemical bond forming reactions within the plasma environment, *into an atmospheric pressure non-thermal equilibrium plasma discharge* and/or an excited gas stream resulting therefrom, and
 - ii) exposing the substrate to the resulting mixture of the one or more gaseous or atomised coating-forming materials and the one or more active materials which are simultaneously deposited onto a surface of the substrate to form the coating, with the one or more active materials trapped/encapsulated within the coating.

REJECTIONS

I. Claims 1 and 4 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Moser² in view of Mikhael.³

² Moser, U.S. Patent Pub. 2003/0148139 A1, published August 7, 2003.

³ Mikhael et al., U.S. Patent Pub. 2002/0195950 A1, published December 26, 2002.

II. Claims 2, 3, 6, 7, 14, 15, 17, and 34–38 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Moser and Mikhael, and further in view of Goodwin.⁴

III. Claims 1–17 and 34–38 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Osaki⁵ in view of Goodwin, Moser, and Mikhael.

DISCUSSION

Appellants direct their arguments to the rejections of independent claim 1 (*see, e.g.*, Appeal Br. 9, 13, 18). Accordingly, our analysis will focus on the rejections of claim 1. The remaining claims, all of which ultimately depend from claim 1, will stand or fall with claim 1.

Rejections I and II. The Examiner finds that Moser teaches each element of claim 1, except that Moser does not teach that the deposition occurs at atmospheric pressure (Final Act. 3–4, citing Moser, ¶¶ 4, 21, 58). The Examiner further finds that Moser teaches that process pressure and discharge method are known process parameters when generating plasmas for depositing barrier layers (Final Act. 4, Moser, ¶ 3). The Examiner also finds that Mikhael teaches a method for depositing barrier layers performed at atmospheric pressure and using glow discharge methods to perform the deposition (*id.*, citing Mikhael, ¶¶ 3, 7). The Examiner determines that it would have been obvious to modify Moser’s process to operate at atmospheric pressures taught by Mikhael because Moser teaches controlling

⁴ Goodwin et al., WO 02/28548 A2, published April 11, 2002.

⁵ Osaki et al., U.S. Patent Pub. 2004/0058056 A1, published March 25, 2004.

reactor pressure and Mikhael teaches that atmospheric pressures are suitable for that purpose (*id.*).

In response, Appellants argue that Moser “**completely fails** to teach or even suggest utilizing pressures *other than low pressures* associated with its non-thermal equilibrium plasma discharge process” (Appeal Br. 10, emphasis in original), and that the pressures used in Moser’s process are orders of magnitude lower than the claimed atmospheric pressure. In this respect, we note that nonobviousness cannot be established by attacking the references individually when the rejection is predicated upon a combination of prior art disclosures. *In re Merck & Co. Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). The relevant inquiry is whether the claimed subject matter would have been obvious to those of ordinary skill in the art in light of the *combined teachings* of those references. *See In re Keller*, 642 F.2d 413, 425 (CCPA 1981).

Appellants further argue that the extremely low pressures they contend are taught by Moser means that a person of ordinary skill in the art would have had no motivation to modify the pressure of its process by many orders of magnitude to arrive at atmospheric pressure (Appeal Br. 10).

In response, the Examiner finds that Moser’s disclosure of low pressures for its deposition process are only preferred pressures, citing Paragraph 47 (a title which reads “Exemplary Embodiments” as well as language in Paragraph 4). However, upon review of the disclosure of Moser, we find that the preponderance of the evidence does not support the Examiner’s finding that Moser’s low pressures are only exemplary embodiments, and agree with Appellants that Moser teaches the use of a very low pressure environment. First, as noted by Appellants, each of the

Examples (starting at Paragraph 47) are run at very low pressures. More importantly, however, Moser, in discussing its process generally, specifically states that “[a] plasma, in the present case as stated a low pressure plasma, is generated for example⁶ by magnetron sputtering, high frequency or microwave discharge processes.” Moser ¶ 4. Thus, we find that, when read as a whole, Moser discloses that its process takes place at low pressure.

However, this finding does not end our analysis. The rejection at issue is an obviousness rejection over the combined teachings of Moser and Mikhael. There is no dispute that Mikhael discloses a process for deposition of a coating at atmospheric pressure using glow-discharge plasma. As noted above, the Examiner determines that it would have been obvious to modify Moser’s process to operate at atmospheric pressure because Moser teaches that one of its process parameters which may be varied is discharge method and Mikhael teaches that atmospheric pressure glow discharge plasmas are suitable for depositing coatings.

Appellants argue that the Examiner’s stated rationale is “merely . . . a conclusory statement of obviousness based on the asserted combination of [Moser] and [Mikhael],” but do not specifically address the Examiner’s stated rationale for combining the references (*see*, Appeal Br. 10–12). Accordingly, we conclude that Appellants have not demonstrated reversible error in the Examiner’s stated rationale for combining the references.

⁶ The Examiner relies on the phrase “for example” in this sentence as evidence that low pressure is only optional (Ans. 2–3). However, when read in context, it is plain that “for example” refers to the methods of generating the plasma, not that the low pressure is only “for example.”

Finally, Appellants argue that a person of skill in the art would not have had a reasonable expectation of success in modifying Moser's process to operate at a pressure which is orders of magnitude higher than expressly taught by Moser (Appeal Br. 12). Appellants provide a detailed explanation of the differences between low pressure and atmospheric pressure conditions, and suggest that these differences would mean a person of skill in the art would not reasonably have expected that Moser's process could be operated at atmospheric pressure (Appeal Br. 12–13).⁷ This argument is not persuasive because, as noted by the Examiner (Ans. 4–5), Mikhael demonstrates that a plasma polymerized layer can be successfully deposited by use of an atmospheric glow plasma discharge and, therefore, Appellants have not shown reversible error in the Examiner's finding that a person of skill in the art would have had a reasonable expectation that Moser's process could be operated at atmospheric pressure.⁸

Accordingly, Appellants' have not demonstrated reversible error in Rejection I or Rejection II.

⁷ We note that Appellants state that "active materials" as used in their process "can be more readily damaged by particle collisions in [low pressure] systems relative to in [atmospheric pressure] systems" (Appeal Br. 13). This would suggest an additional rationale to modify Moser's process to operate at atmospheric pressure.

⁸ We also note that Appellants' technical discussions are based solely on attorney argument, and not evidence in the record. In addition, the Examiner's conclusion that a person of skill in the art would have had a reasonable expectation (not certainty) that Moser's process could be operated at atmospheric pressure is consistent with Appellants' statements in the Abstract and Specification (¶ 21) that their process can be operated either at low-pressure or atmospheric pressure.

Rejection III. We affirm Rejection III for the reasons well expressed by the Examiner in the Final Action and, in particular, at pages 5–7 of the Answer, which persuasively address the arguments raised by Appellants in their Appeal Brief. In particular, the arguments regarding Osaki’s process occurring at low pressure versus the claimed atmospheric pressure are not persuasive for the same reasons as discussed above in connection with Rejection I. With regards to Appellants’ argument that Osaki does not teach applying the active materials via deposition (Appeal Br. 16), Appellants have not persuasively refuted the Examiner’s reliance on Moser as teaching this aspect of the claimed invention (Final Act. 8–9, Ans. 6).

CONCLUSION

We AFFIRM the rejection of claims 1 and 4 under 35 U.S.C. § 103(a) as being unpatentable over Moser in view of Mikhael.

We AFFIRM the rejection of claims 2, 3, 6, 7, 14, 15, 17, and 34–38 under 35 U.S.C. § 103(a) as being unpatentable over Moser and Mikhael, and further in view of Goodwin.

We AFFIRM the rejection of claims 1–17 and 34–38 under 35 U.S.C. § 103(a) as being unpatentable over Osaki in view of Goodwin, Moser, and Mikhael.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1) (iv).

AFFIRMED